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Randy
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PATENT

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the application of:

Anthony REDMOND et al

Serial No.: 09/995739

Group Art Unit: 2177

Filed: November 29, 2001

For: TRACKING OF COMPUTER BASED
TRAINING COURSES

CLAIM OF PRIORITY
UNDER 35 U.S.C. § 119

Commissioner of Patents
Washington, D.C. 20231

Sir:

The benefit of the filing date of prior foreign application No. 2000/0973 filed in Ireland on November 30, 2000, is hereby requested and the right of priority provided in 35 U.S.C. §119 is hereby claimed.

In support of this claim, filed herewith is a certified copy of said original foreign application.

Respectfully submitted,

JACOBSON HOLMAN, PLLC

By: _____

John C. Holman
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Telephone: (202) 638-6666
Atty. Docket No.: P67361US0
Date: February 22, 2002



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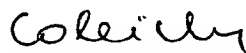
I HEREBY CERTIFY that annexed hereto is a true copy of documents filed in connection with the following patent application:

Application No. 2000/0973

Date of Filing 30 November 2000

Applicant CBT (TECHNOLOGY) LIMITED, an Irish company of Stephen Court, St. Stephens Green, Dublin 2, Ireland.

Dated this 20 day of November 2001.


An officer authorised by the
Controller of Patents, Designs and Trademarks.

REQUEST FOR THE GRANT OF A PATENT

PATENTS ACT, 1992

The Applicant(s) named herein hereby request(s)

X the grant of a patent under Part II of the Act

_____ the grant of a short-term patent under Part III of the Act
on the basis of the information furnished hereunder.

1. Applicant(s)

Name CBT (Technology) Limited

Address Stephen Court
St. Stephens Green
Dublin 2
Ireland

Description/Nationality

An Irish company

2. Title of Invention

"Tracking of computer based training courses"

3. Declaration of Priority on basis of previously filed application(s) for same invention (Sections 25 & 26)

Previous filing date

Country in or for
which filed

Filing No.

4. Identification of Inventor(s)

Name(s) of person(s) believed
by Applicants(s) to be the inventor(s)

5. Statement of right to be granted a patent (Section 17(2)(b))

0000973

6. Items accompanying this Request – tick as appropriate

- (i) ☒ prescribed filing fee (£100.00)
- (ii) ☒ specification containing a description and claims
☐ specification containing a description only
☒ Drawings referred to in description or claims
- (iii) ☐ An abstract
- (iv) ☐ Copy of previous application (s) whose priority is claimed
- (v) ☐ Translation of previous application whose priority is claimed
- (vi) ☒ Authorisation of Agent (this may be given at 8 below if this Request is signed by the Applicant (s))

7. Divisional Application (s)

The following information is applicable to the present application which is made under Section 24 –

Earlier Application No:

Filing Date:

8. Agent

The following is authorised to act as agent in all proceedings connected with the obtaining of a patent to which this request relates and in relation to any patent granted -

Name

Address

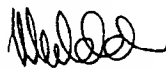
John A. O'Brien & Associates

The address recorded for the time being in the Register of Patent Agents, and currently Third Floor, Duncairn House, 14 Carysfort Avenue, Blackrock, Co. Dublin, Ireland.

9. Address for Service (if different from that at 8)

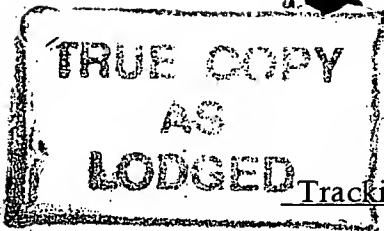
As above

Signed



JOHN A. O'BRIEN & ASSOCIATES

Date November 30, 2000

Tracking of Computer Based Training CoursesIntroduction

- 5 The invention relates to tracking of progress of a computer based training course by a student.

An object of the invention is to allow such tracking in a versatile and effective manner.

10

Statements of Invention

According to the invention, there is provided a computer based training tracking system comprising:

15

a student interface comprising means for receiving progress reports from training systems used by students, and

20

a database controller comprising means for writing progress data to a database.

In one embodiment, the student interface comprises means for receiving progress reports from a plurality of remote training systems.

- 25 In another embodiment, the progress reports are in a course management interface markup language.

In a further embodiment, the tracking system further comprises a pre-processor plug comprising means for translating foreign tracking description languages into a tracking system language.

30

Preferably, the tracking system is linearly scaleable.

5 In one embodiment, the student interface comprises means for managing a queue of student progress reports and serving the queue with a pool of transaction threads.

In another embodiment, the student interface comprises means for asynchronously receiving progress reports without making a reply during a connection.

10 Detailed Description of the Invention

The invention will be more clearly understood from the following description of some embodiments thereof, given by way of example only with reference to the accompanying drawings in which:-

15

Fig. 1 is high level diagram illustrating the main systems involved in course playing and tracking; and

Fig. 2 is a diagram illustrating the architecture of a system for tracking.

20

Referring to Fig. 1 a number of servers 1 are together a global training adapter for tracking progress of courses by students using systems 2. The tracking data is saved to a tracking database 3.

25 The adapters 1 receive progress updates in CMI-ML (Course Management Interface-Markup Language) format. Third party computer based training suppliers write a simple library plug in the adapters 1 to translate schema employed within their LMS (Learning Management System). In addition, the adapters 1 include a pre-processor plug which translates foreign tracking description languages into CMI-ML format.
30 This provides excellent flexibility.

As is clear from Fig. 1 there is linear scalability for handling growing numbers of progress returns. As there are multiple applications on each hardware platform and multiple IP addresses (multi-homed) and with load balancing control, millions of transactions can be handled per day.

The system 1 is a TCP/IP communications system which is multi-threaded and listens across the network (Internet, LAN, or WAN) for the player connections.

Once a student's courseware player connects, the system takes in the request and puts it into a queue, which is served by a pool of transaction threads. If the user requires an immediate response (student progress retrieval), the client player is made wait. If not, as in the case of progress return, the client can disconnect. This "fire and forget" approach gives the system speed and scalability.

Once the transaction is in the queue, the queue worker threads interpret the request, process it through the database via schema access objects (SAO) and hence store or retrieve the progress. The system also contains some features that ensure the integrity of the student's progress. For example, if there is a fault and the system cannot process requests, it stores the queue on disk in a dump file, resets its connections to the database, reads back in the dump file, and tries to process requests again. Therefore, it is also fault tolerant.

The overall architecture of the system is as shown in Fig. 2.

CMI-ML

CMI-ML (Course Management Interface Markup Language) provides the definition of the student progress to be transported across the Internet. It was designed from the ground up for this purpose and supports learning objects. CMI-ML is designed to

cater specifically for the needs of course progress return but contains the ability for a vendor to add in new tags to the system to support the return of progress by third party content players. Such additions are catered for by the system by looking for a library that matches the tags used by a particular vendor.

5

The CMI-ML progress language is small and efficient and runs through all secure Internets without worry for large corporations. It works collaboratively with the security and application systems within an organisation.

- 10 The invention is not limited to the embodiments described but may be varied in construction and detail.

Claims

1. A computer based training tracking system comprising:
 - 5 a student interface comprising means for receiving progress reports from training systems used by students, and
 - a database controller comprising means for writing progress data to a database.
- 10 2. A system as claimed in claim 1, wherein the student interface comprises means for receiving progress reports from a plurality of remote training systems.
- 15 3. A system as claimed in claim 1 or 2, wherein the progress reports are in a course management interface markup language.
4. A system as claimed in any preceding claim, wherein the tracking system further comprises a pre-processor plug comprising means for translating
20 foreign tracking description languages into a tracking system language.
5. A system as claimed in any preceding claim, wherein the tracking system is linearly scaleable.
- 25 6. A system as claimed in any preceding claim, wherein the student interface comprises means for managing a queue of student progress reports and serving the queue with a pool of transaction threads.
- 30 7. A system as claimed in claim 6, wherein the student interface comprises means for asynchronously receiving progress reports without making a reply during a connection.

8. A tracking system substantially as described with reference to the drawings.

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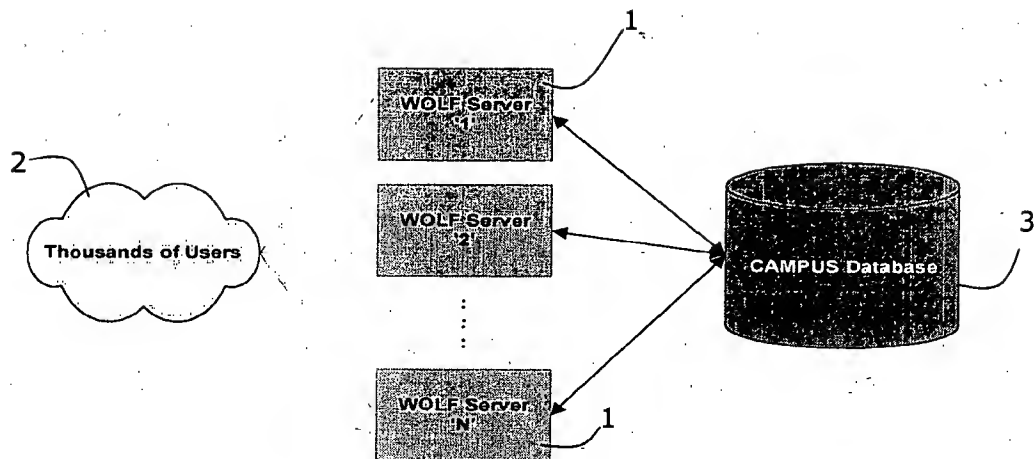


Fig. 1

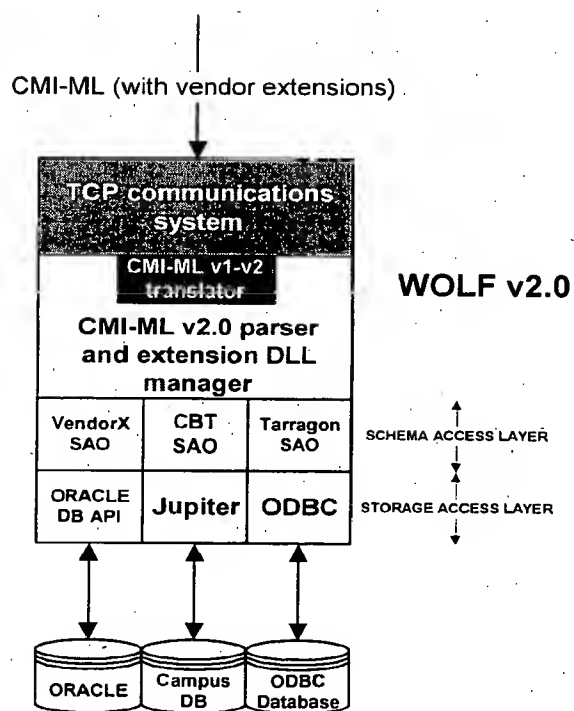


Fig. 2